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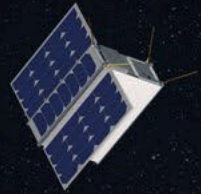
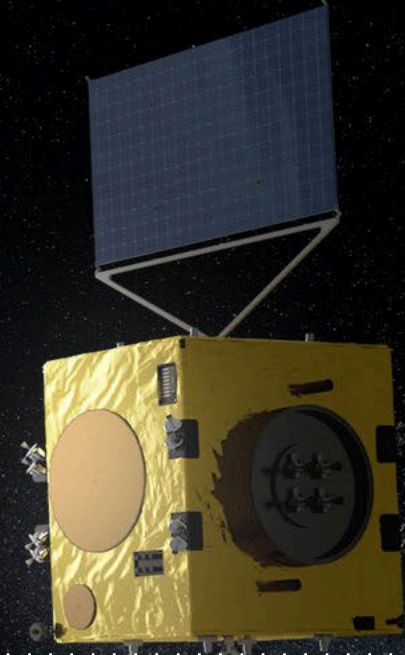


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Updates first SMPAG hypothetical threat exercise

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Space Mission Planning Advisory Group, 19/10/2022

The SMPAG introduced the proposal for such an exercise, following its 16th meeting, to the Scientific and Technical Subcommittee of COPUOS as part of its reporting.

The **first SMPAG hypothetical threat exercise** will focus on the inter-agency procedure to organise a coordinated response to the threat

Primary objective

- to define the tasks required for a SMPAG coordinated response to the Exercise NEO threat
- to define which entity/ies would be responsible for these tasks.
- to identify the procedures internally to each SMPAG member to propose a response to the SMPAG

Secondary objective

Aside the minimum aim of the exercise described above, a **desired but not requested aim** of this first SMPAG exercise is to simulate and perform the actual tasks or part of them for the selected threat scenario. This secondary objective can be done collaboratively between contributing SMPAG members.



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EXERCISE TASKS

- The **first sprint** will focus on the national organisation and coordination and on defining the lists of tasks to be performed in response to a real threat scenario.
- To harmonise the national (SMPAG-level) efforts into a SMPAG coordinated action this must be organised at communication level, technical level, decision level. The **second sprint** will focus on discussing how the coordination is done among different SMPAG delegations.
- The **third sprint** will deal with communication and coordination issues within SMPAG.

Task 1 List the required tasks for a coordinated response to the threat.

- A non-complete list of tasks is reported here below as example. It is asked to each delegation to complete this list.
 - Refinement of risk of impact, Improved orbit determination, Trade-off of possible mission architectures and deflection strategies, Selection of the deflection strategy and eventual investigation mission, Perform mission analysis of selected mission, Perform system design of selected mission, Approval at SMPAG-member level of the proposed mission, Others...

Task 2 List the entities involved at national (SMPAG-member) level for the completion and coordination of these tasks at national (SMPAG-member) level

- List all the different entities involved at national (SMPAG-member) level for the completion of this tasks, describe how the coordination of these tasks is performed at national level.
- Explain which tasks can be performed at national level as there is internal capabilities to perform them and for which tasks there is no internal capabilities.

Task 3 Explain the internal (SMPAG-member) procedure for performing and advancing the tasks identified at Task 1 at national (SMPAG-member) level

Outcome of first sprint



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- Several delegations responded to the exercise

Country	Agency	Role	Form	Present	Report
Austria	FFG	Participant	yes, doc	yes	
China	CNSA	Participant	yes, two	yes	
ESA	ESA	Participant	yes	yes	
France	CNES	Participant	personal view	yes	
Germany	DLR	Participant	need approval	yes	
Israel	ISA	Participant	yes	yes	
Italy	ASI	Participant	yes	yes	yes
Pakistan	SUPARCO	Participant			
Romania	ROSA	Participant	yes	yes	
US	NASA	Participant	yes	yes	
UK	UKSA	Participant	need approval	yes	
South Korea	KARI	Participant			
Japan	JAXA	Participant			

Outcome of first sprint

Input collections

- Input collected through Online Forms
- Presentations given by delegation during PM
- Report structure prepared
- ASI contribution included

Outcome of first sprint



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Input collections – See email with **actions for you**

- Please **share your presentation** if you have not done it yet
- See the link to the shared document for Sprint 1: one chapter per Delegation
- **Option 1:** Give permission to ASI **by 31 Oct 2022** to include in the report your contribution from the Form
- **Option 2:** Fill in your contribution directly in the report **by 15 Nov 2022**
- **This is the last chance for missing delegation to submit your input**
- Fill in doodle for next PM weeks: 21 Nov, 28 Nov, 5 Dec
 - Synthesis of the results
 - Start sprint 2

- For many delegations a structured procedure for answer to a NEO threat is not in place yet
- The exercise served/is serving as means of
 - Identifying the requested steps at national level
 - Started the process of survey at national level
 - Started or will start steps for definition of working group
 - Re-iteration is needed in most cases
 - However it is suggested to complete the report anyway. Do not need an internal procedure before giving approval to the report!

Task 4 Identify the tasks distribution among SMPAG members for a coordinated NEO response

- The tasks identified in Task 1 need to be coordinated and performed in a collaborative effort at SMPAG level. To this aim this Task will identify the tasks distribution among multiple SMPAG members for a SMPAG NEO response and will discuss how the coordination at the level of SMPAG members is achieved.

Task 5 Identify data exchange mechanics and formats

- For a fruitful collaboration the data exchange mechanics need to be defined together with the data formats. This task will be completed through a discussion at the SMPAG level.

- The output of the exercise will be a final report containing all the output of Sprint (1/3) on the national coordination, print 2/3 on SMPAG collaboration and sprint 3/3 on SMPAG coordination and communication. The report will have single delegation part and SMPAG part depending on the tasks.
- The results of the analysis and the collective analysis of each delegation will be coordinated in a unique presentation at SMPAG meeting in Feb 2023.
- The desired output of the first SMPAG NEO threat exercise is to draft a:
 - Single delegation (SMPAG members) coordination plan
 - SMPAG common coordination plan
- The resulting report and presentation could form a conference paper for information under NEO agenda item of the Scientific and Technical Subcommittee of COPUOS.



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First SMPAG NEO threat exercise

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